



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,329	07/23/2003	Daniel R. Demarco	FA1104USNA	7769

23906 7590 10/04/2005

E I DU PONT DE NEMOURS AND COMPANY  
LEGAL PATENT RECORDS CENTER  
BARLEY MILL PLAZA 25/1128  
4417 LANCASTER PIKE  
WILMINGTON, DE 19805

EXAMINER

BELL, BRUCE F

ART UNIT	PAPER NUMBER
----------	--------------

1746

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/625,329

Applicant(s)

DEMARCO ET AL.

Examiner

Bruce F. Bell

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/13/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6, 10-13, 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Riffe et al (GB 1597305).

Riffe et al disclose a cathodic protection method and system utilizing a zinc rich coating on the surface portion of the hull of a ship and having a resistive circuit for the purpose of applying a direct current through the zinc rich coating so that the metal functions as the cathode. A DC power supply or battery is used, wherein the positive terminal of the power supply is connected through a variable resistance to the anode. See page 3, lines 48-53 and page 4, lines 4-9. The inorganic zinc-rich coating over lays the hull and is comprising of a composition having 80-90% zinc powder by weight. See page 5, lines 60-65. A negative potential is applied so that positive metal ions will be held closely to a negatively charged hull in a tight electrostatic layer and will not be allowed to diffuse away from the coating water interface as normally occurs. See page 5, lines 124-130. A current density of from 25 to 250 mA/sq. ft. is produced at the zinc conductive surface of the hull. See page 3, lines 36-43.

Art Unit: 1746

The prior art of Riffe et al anticipates the applicant's instant invention as set forth above with respect to the instant claims.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Riffe et al (5346598).

Riffe et al disclose a method for the prevention of fouling and/or corrosion of the exposed surfaces of a structure which is in contact with seawater, brackish water or fresh water. The system includes using a structure having an exposed zinc containing surface, wherein at the exposed surface water interface a negative capacitive charge or an asymmetric alternating electrostatic charge is induced and maintained. See abstract. Structures that can be protected by the Riffe et al patent are those of a ship, pipe or any other structure having any given form and which is exposed to a water environment. See col. 5, lines 21-35. Titanium electrodes used as the anodes in the invention are disposed within the ships hull coated with a zinc coating and are capacitatively coupled to form a large electrolytic capacitor in which the ships hull functions as a negative plate. See col. 8, lines 60-68. The potential difference between the anodes and the ships hull is approximately 8 to 10 volts and the current density is in the range of 4 to 8 mA/sq.ft. At this current density range, there is sufficient energy to ionize water

Art Unit: 1746

without evolving sufficient free hydrogen at the zinc water interface to cause hydrogen embrittlement of the hull. See col. 9, lines 59-68. The negative charge impressed upon the ships hull and the conductively coupled zinc coating causes limited electrolytic disassociation of water into hydrogen ions and hydroxyl ions. See col. 10, lines 1-4. The ship's hull is disclosed to be that of steel See col. 8, lines 39-48.

The prior art of Riffe et al anticipate applicant's instant invention as set forth above with respect to the instant claims. Riffe et al discloses that the structures to be protected can be any structure having any given form which is exposed to a water environment. Therefore, the instant claims with respect to a bridge or storage tank are inherent. Further, steel is known to be iron based metal and therefore, the instant claim with respect to being iron or iron based alloy is inherent.

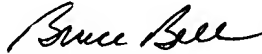
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1746

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BFB  
October 1, 2005

  
Bruce F. Bell  
Primary Examiner  
Art Unit 1746